

Claims

That which is claimed is:

1. An input device for scrolling an image relative to a display screen, the input device comprising:
 - a scroll wheel rotatable in opposing first and second directions about an axis; and
 - a scroll wheel locking element movable to a first position that prevents the rotation of the scroll wheel in the first direction and permits rotation of the scroll wheel in the second direction.
2. The input device recited in claim 1, wherein the scroll wheel locking element is movable to a second position that prevents the rotation of the scroll wheel in the second direction and permits rotation of the scroll wheel in the first direction.
3. The input device recited in claim 1, further comprising a lockable wheel, wherein the lockable wheel and the scroll wheel are coupled to one another.
4. The input device recited in claim 3, wherein the lockable wheel and the scroll wheel are coupled to a common axle.
5. The input device recited in claim 3, wherein the lockable wheel includes a plurality of angularly spaced pins.
6. The input device recited in claim 1, further comprising a solenoid coupled to the scroll wheel locking element to move the scroll wheel locking element between multiple positions.
7. The input device recited in claim 1, wherein the input device is one of a mouse, a trackball, and a keyboard.
8. An input device for scrolling an image relative to a display screen, the input device comprising:
 - a scroll wheel rotatable in opposing first and second directions; and

a unidirectional scroll wheel locking system.

9. The input device recited in claim 8, wherein the unidirectional scroll wheel locking system includes a ratchet and a pawl.

10. The input device recited in claim 9, wherein the ratchet is a lockable wheel, said input device further comprising a light source and a light sensor positioned on opposite sides of the lockable wheel.

11. The input device recited in claim 10, wherein the lockable wheel includes a plurality of openings defined therein such that light from the light source may pass through the openings and toward the light detector when the lockable wheel rotates.

12. The input device recited in claim 11, further comprising an axle, wherein the scroll wheel and the lockable wheel are mounted to the axle such that rotation of the scroll wheel causes rotation of the lockable wheel.

13. The input device recited in claim 12, wherein the pawl is operable to permit motion rotational movement in a first direction only when in the pawl is in a first position, and is operable to permit motion rotational movement in a second direction only when in the pawl is in a second position.

14. An input device for scrolling an image relative to a display screen, the input device comprising:

- a housing having an aperture;

- a scroll wheel extending partially through the aperture, the scroll wheel being rotatable in opposing first and second directions; and

- a controller configured to activate a scroll wheel locking element to prevent the rotation of the scroll wheel in the first direction and permit rotation of the scroll wheel in the second direction.

15. The input device recited in claim 14, wherein the controller is configured to activate the scroll wheel locking element in response to a user scrolling a document to an end of the document.

16. The input device recited in claim 15, wherein the controller includes a microprocessor.

17. The input device recited in claim 14, wherein the input device is one of a mouse, a trackball, and a keyboard.

18. An input device for scrolling an image relative to a display screen, the input device comprising:

- a scroll wheel rotatable in opposing first and second directions; and
- a scroll wheel locking lever positionable in first, second, and third distinct positions.

19. The input device recited in claim 18, further comprising a lockable wheel having angularly spaced lockable members and wherein the scroll wheel locking lever is tangential to the lockable members.

20. The input device recited in claim 18, wherein the scroll wheel locking lever has a locking element including a first surface and a second surface, wherein the first surface is disposed to physically engage an angularly spaced lockable member and prevent rotation of the lockable wheel when the scroll wheel is rotated in a first direction, and the second surface is disposed to physically engage an angularly spaced lockable member by permitting the rotation of the lockable wheel when the scroll wheel is rotated in a second direction.